

ON NORTH AMERICAN PHLEOTHRIPIDÆ (THYSANOPTERA), WITH DESCRIPTIONS OF TWO NEW SPECIES.

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Trichothrips anomocerus, sp. nov.—(Plate VI, figs. 1-4)

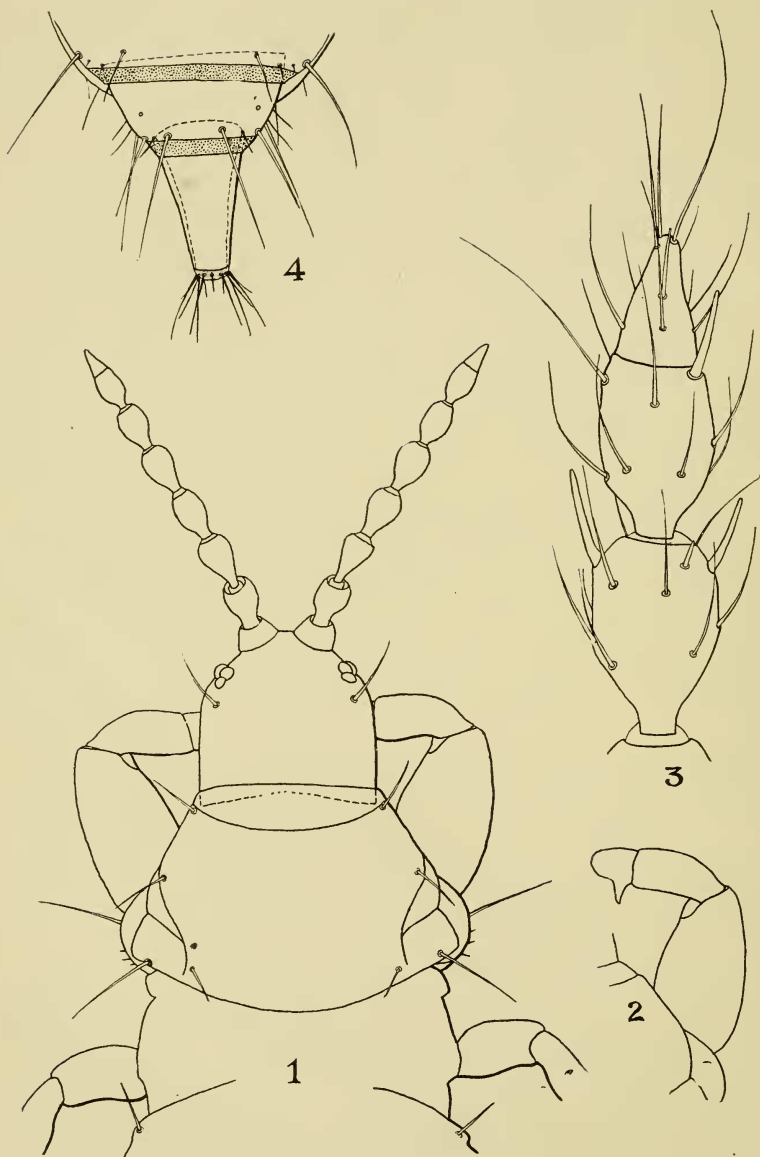
Female.—Forma brachyptera. Length about 1.5 mm. Colour clear brownish yellow, with conspicuous hypodermal pigmentation in head, thorax and abdomen, which is orange by reflected light and maroon-brown by transmitted light; tube heavily chitinated and darker at middle; segments 7 and 8 of antennæ blackish brown.

Head distinctly wider than long, blunt anteriorly, frons not at all produced between antennæ, dorsal and lateral surfaces with very minute spines; vertex flat, evenly declivous; genæ subparallel, rounded; postocular bristles pointed, moderately long. Eyes greatly reduced, only one facet visible on lateral profile. Ocelli wanting. Antennæ slightly more than twice as long as head, the last two segments compactly united, the separating suture scarcely visible; segment 3 subconical; 4-6 oval, pedicellate; 7+8 lanceolate, pedicellate; segments 1 and 2 exactly concolorous with body; 3-6 successively very slightly darker; 7+8 rather abruptly dark blackish brown; sense cones moderate in length, slender; formula: 3, 1-1; 4, 1-2; 5, 1-1⁺¹; 6, 1-1⁺¹; 7, 0-1; 8 with one at middle of dorsum. Mouth-cone not quite attaining base of prosternum; labium broadly rounded; labrum pointed, scarcely surpassing labium.

Prothorax large, massive, notum weakly chitinated; it is distinctly longer than head (about equal in length to width of head), and across the coxæ is just twice as wide as long; bristles long, pointed; anterior marginals wanting. Pterothorax greatly reduced, narrower and shorter than prothorax. Legs stout, concolorous with body; fore femora short, thick; fore tarsus armed with a strong, acute tooth.

Abdomen large, heavy, about one and one-fourth times as wide as pterothorax; all bristles pointed. Tube thickly chitinated, slightly shorter than head, about two and one-half times as wide at base as at apex; terminal bristles short, about half as long as tube.

Measurements: Length, 1.53 mm.; head, length .18 mm., width .20 mm.; prothorax, length .205 mm., width (inclusive of coxæ) .40 mm.; pterothorax, width .37 mm.; abdomen, width .47 mm.; tube, length .17 mm., width at base .101 mm., at apex .041 mm. Antennæ: Segment



TRICHOTHRIPS ANOMOCERUS, SP. NOV.

1, 45μ ; 2, 56μ ; 3, 62μ ; 4, 56μ ; 5, 59μ ; 6, 51μ ; 7, 45μ ; 8, 33μ ; total, .41 mm.; width at segment 4, .039 mm.

Male.—Forma brachyptera. Slightly smaller than female. Length about 1.1 mm. Prothorax very slightly, if any, heavier than in female. Fore femora slightly more swollen; tarsal tooth a little stouter. Abdomen slender, tapering from near the base.

Measurements: Length, 1.09 mm.; head, length .17 mm., width .19 mm.; prothorax, length .192 mm., width (inclusive of coxæ) .37 mm.; pterothorax, width .32 mm.; abdomen, width .38 mm.; tube, length .13 mm., width at base .083 mm., at apex .036 mm. Antennæ: Segment 1, 45μ ; 2, 50μ ; 3, 56μ ; 4, 49μ ; 5, 53μ ; 6, 47μ ; 7, 43μ ; 8, 29μ ; total, .37 mm.; width at segment 4, .034 mm.

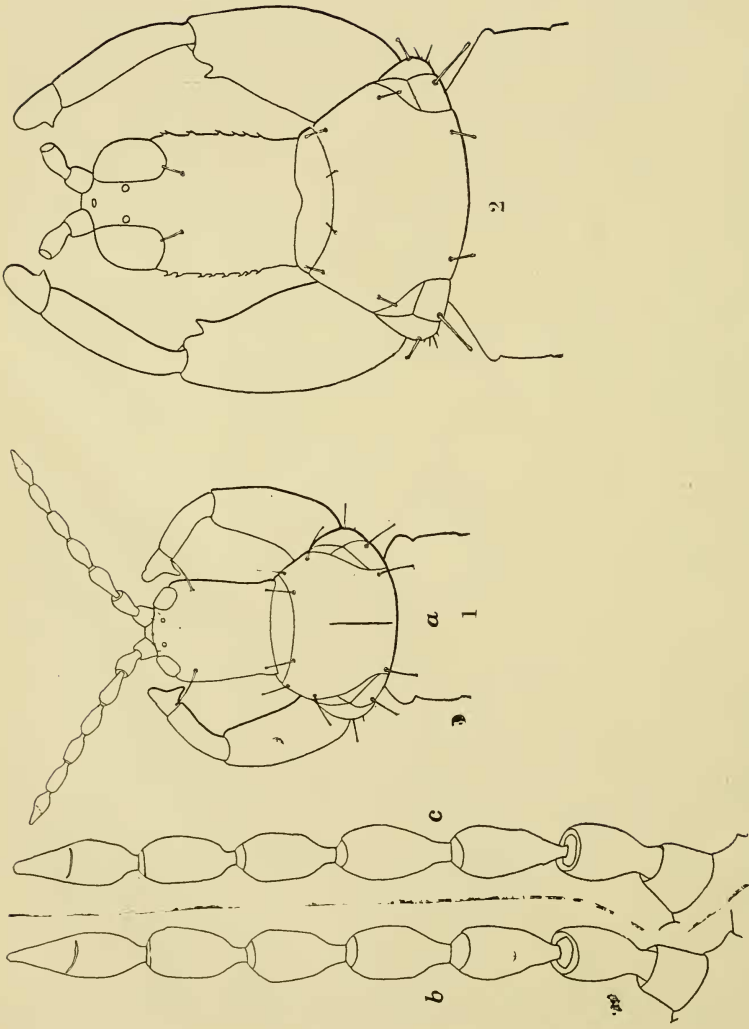
Described from fifteen females and seven males, taken in February under sycamore bark at Plummers Island, Maryland (in the Potomac near Washington, D. C.), by Mr. W. L. McAtee.

The form of the apical antennal segments seems to ally this species quite closely to *T. ambitus* Hinds, from which, however, it is abundantly distinguished by the shorter tube, shorter and broader head, and the much heavier prothorax. The general facies of the species is thus that of *T. pedicularius* Haliday and *T. americanus* Hood.

Cryptothrips junctus, sp. nov.—(Pl. VII, fig. 1, a, b, c.)

Female.—Forma brachyptera. Length about 1.7 mm. Surface smooth, shining, anastomosing lines scarcely evident. Colour by reflected light bright crimson red; head and prothorax darkened with blackish brown; tube, legs and antennæ nearly black. Colour by transmitted light blackish brown; the head, prothorax and abdomen with a nearly continuous layer of bright crimson hypodermal pigment; antennæ dark blackish brown, segments 1 and 2 and pedicel of 3 slightly paler; legs slightly paler than antennæ, non-pigmented, tarsi pale yellow.

Head rectangular, about one and one-fifth times as wide as long; cheeks parallel, rounded very abruptly to eyes and slightly flaring at base; vertex rounded, slightly produced; postocular bristles long, explanate and divided at tip. Eyes small, flattened, protruding, anterior in position and directed forward. Ocelli small, subapproximate, anterior, the posterior far removed from the eyes. Antennæ seven-segmented, with an oblique suture at middle of ventral surface; spines and sense-cones long, slender; formula: 3, 1-2; 4, 2-2; 5, 1-1⁺; 6, 1-1⁺; 7, 0-1. Mouth-cone large, heavy, blunt; maxillary palpi more than half the length of pronotum.



CRYPTOTHRIPS JUNCTUS, SP. N., AND ACANTHOTHRIPI NODICORNIS REUT.

Prothorax three-fourths as long as width of head and (inclusive of coxæ) slightly more than twice as wide as long; usual bristles all present, long, dilated and divided at tip. Pterothorax much broader than long, sides subparallel. Legs short, rather slender; fore tarsi armed with a rather long, acute tooth.

Abdomen stout, about one and one-half times as broad as pterothorax; sides subparallel at base, converging roundly from segment 6 to tube. Tube about .6 as long as head, distinctly more than twice as wide at base as at apex, tapering evenly.

Measurements: Length, 1.75 mm.; head, length .30 mm., width .25 mm.; prothorax, length .18 mm., width (inclusive of coxæ) .40 mm.; pterothorax, width .39 mm.; abdomen, width .57 mm.; tube, length .17 mm., width at base .092 mm., at apex .039 mm. Antennal segments: 1, 48μ ; 2, 66μ ; 3, 66μ ; 4, 68μ ; 5, 64μ ; 6, 64μ ; 7, 90μ ; total length of antenna, .47 mm.; width at segment 4, .037 mm.

Female.—Forma macroptera. Differs from the brachypterous form only in the presence of wings and the consequent increased development of the pterothorax.

Fore wings much broader than hind pair, sparsely fringed, and of equal width throughout; subapical fringe double for five or six hairs; the three subbasal spines knobbed; wings of both pairs uniformly brown in colour.

Male.—Forma brachyptera. Differs from the brachypterous female in the somewhat slenderer head with subconcave cheeks, as seen from above, larger prothorax with a thickened median line becoming obsolete before apex and base, stouter and slightly arcuate fore femora, longer and stouter tarsal tooth, and the slenderer abdomen.

Described from twenty females (two of which are macropterous) and eleven males from Baldwin, Michigan, and Mahomet and Murphysboro, Illinois. Specimens were taken April 17, August 16, September 4 and November 7, under bark on white oak, soft maple and sycamore, by Dr. H. E. Ewing, L. M. Smith and the writer.

Type locality: Baldwin, Michigan.

The seven-segmented antennæ, elongate maxillary palpi and the armed tarsus of the female distinguish this species at once from *C. rectangularis* Hood and *C. carbonarius* Hood, the only North American species properly referable to *Cryptothrips*.

During the latter part of August, 1908, I found pupæ of this species in abundance at Baldwin, Michigan, under the loose scales of the bark of

some white oak trees (*Quercus alba*) which stood in a lowland sandy area between two small lakes ; and with them was occasionally seen a wingless male or, more rarely, a wingless female. By August 31 adults were plentiful, always wingless, and the males greatly outnumbered the females. September 2 females were abundant, and one of those taken was macropterous. September 4 two males and a second winged female were found to have matured in a vial which contained pupæ taken September 2.

Acanthothrips nodicornis Reuter.—(Pl. VII, fig. 2.)

This species has long been known as *Acanthothrips nodicornis*, but Amyot and Serville's *Hoplothrips corticis*, dating from 1843, is probably identical with it. The only North American record of the species is that by Franklin (*Psyche*, Vol. X, p. 222, 1903), who found a single female under loose bark on a sycamore tree at Amherst, Massachusetts. My specimens, four females and six males, were taken in an open sandy forest about twelve miles from Baldwin, Michigan. One hot summer's day in August many were seen in copulation on the stump of a young poplar, which two weeks before had been cut for tent stakes ; but when approached they scampered hastily away or dropped at once to the ground and secreted themselves among the fallen leaves. The few taken are all somewhat larger than European examples, averaging nearly one millimeter longer than several specimens (presumably cotypes) received from Prof. Reuter. The drawing and the following description, based on North American examples, may be of use to students of the group.

Female.—Length about 3 mm. Dorsal surface closely subreticulate ; ventral surface smooth. Colour by reflected light nearly black ; abdominal segments 3–8 marked at base with a pair of latero-dorsal white blotches, about equal in size to the second antennal segment. By transmitted light the colour is dark blackish brown with maroon pigmentation ; antennal segments 1 and 2 concolorous with the body, 2 paler at apex ; segments 3–5 with base and apex yellow, intermediate portion blackish brown ; segments 6–8 slightly lighter than body, the base of segment 6 yellowish ; legs concolorous with body, excepting tarsi and extremities of tibiae, which are yellowish brown.

Head one and one-half times as long as wide ; sides subparallel, converging slightly to eyes and to base, forming a slight neck-like constriction ; dorsal and lateral surfaces sparsely spinose, the lateral spines arising from anterior surface of prominent tubercles, of which about eight are visible on each cheek ; postocular bristles short, blunt, inconspicuous, one-third

as long as eyes.* Eyes large, very finely faceted, one-third as long as head and about as wide as their interval. Ocelli moderate in size; anterior ocellus slightly overhanging the abruptly declivous vertex. Antennæ slender, about one and three-fourth times as long as head; segments 3-6 urn-shaped; 7 and 8 closely united, the latter conical; sense-cones long and slender, scarcely distinguishable from the antennal bristles; formula: 3, 1-2; 4, 1-2⁺¹; 5, 1-1⁺¹; 6, 1-1⁺¹; 7 with one on dorsum near apex.† Mouth-cone pointed, attaining the mesosternum.

Prothorax about .6 as long as head and, inclusive of coxæ, about twice as wide as long; usual spines all present, expanded distally. Pterothorax slightly wider than prothorax; sides nearly straight, slightly converging posteriorly. Wings large, powerful, arcuate, of nearly equal width throughout; fore wings faintly washed at base with brown, and with the three subbasal spines nearly equal in length and blunt; apical fringe double for about thirty hairs; hind wings with a faint vein at costal third reaching about to middle. Fore femora large; subapical tooth acute and directed slightly anteriorly; fore tarsi armed with a broad acute tooth, the anterior margin of which is at right angles to the tarsus.

Abdomen large, broadly rounded at apex; marginal bristles dilated at tip. Tube about .8 as long as head, tapering evenly from base to apex; terminal bristles about as long as tube.

Measurements: Length, 3.2 mm.; head, length .43 mm., width .29 mm.; prothorax, length .27 mm., width (inclusive of coxæ) .56 mm.; pterothorax, width .65 mm.; abdomen, width .69 mm.; tube, length .34 mm., width at base .104 mm., at apex .052 mm. Antennal segments: 1, 48 μ ; 2, 73 μ ; 3, 148 μ ; 4, 129 μ ; 5, 120 μ ; 6, 87 μ ; 7, 75 μ ; 8, 44 μ ; total, .73 mm.; width, .042.

Male.—Shorter and slenderer than female. Length about 2.6 mm. Fore femora larger, stouter, nearly as wide as head; tarsal tooth larger, slightly curved. Abdomen tapering evenly from about segment 6 to base of tube.

*Moulton, in his Synopsis, Catalogue and Bibliography of North American Thysanoptera, Tech. Ser., 21, Bur. Ent., U. S. Dept. Agr., states in his key on page 19 that *H. magnafemoralis*, *nodicornis* and *doanei* have no postocular spines. This is incorrect as regards the first two species, at least.

†The formula for the antennal sense-cones is the same as this in both *H. magnafemoralis* Hinds and *H. albivittatus* Hood. In the original description of the latter species, however, their positions are not so described, the three rudimentary cones and the full-developed one on the outer surface of the third segment having been overlooked in the nearly opaque and otherwise unsatisfactory type specimen.

EXPLANATION OF PLATES VI AND VII.

Plate VI.

Fig. 1. *Trichothrips anomocerus*, sp. nov.—Female, $\times 117$.

Fig. 2. *Trichothrips anomocerus*.—Apex of right antenna of female, $\times 514$.

Fig. 3. *Trichothrips anomocerus*.—Tip of abdomen of female; membranous portions stippled; $\times 117$.

Fig. 4. *Trichothrips anomocerus*.—Right fore leg of female, $\times 117$.

Plate VII.

Fig. 1. *Cryptothrips junctus*, sp. nov.—a, head and prothorax of σ , $\times 67$; b, left antenna of φ from Michigan, $\times 199$; c, left antenna of φ from Illinois, $\times 199$.

Fig. 2. *Hoplothrips nodicornis*, Reuter; φ , head and pronotum; $\times 67$.

LASIOPTERYX MANIHOT, N. SP. (DIPTERA).

BY E. P. FELT, ALBANY, N. Y.

The small, yellowish midges were reared from *Cassava* (*Manihot utilissima*), July 15, 1911, by Mr. W. H. Patterson, of the Agricultural School, St. Vincent, W.I. This species appears to be allied to *L. carpinii* Felt, from which it is easily distinguished by the narrow wings. The longer, stouter antennæ in both sexes serves to separate it from a more closely allied undescribed form.

Male.—Length, 1 mm. Antennæ nearly as long as the body, thickly haired, fuscous; 13 segments, the fifth with a stem about $\frac{1}{2}$ the length of the basal enlargement, which latter has a length $\frac{1}{2}$ greater than its diameter and bears a thick whorl of long, stout setæ; terminal segment produced, with a length thrice its diameter and tapering to a narrowly rounded apex. Palpi yellowish. Mesonotum fuscous yellowish. Scutellum, postscutellum and abdomen yellowish, the latter sparsely haired. Wings subhyaline, broad, costa dark brown, the membrane rather thickly clothed with linear scales. Halteres yellowish. Coxæ and femora mostly yellowish, the tibiæ slightly darker, the tarsi fuscous yellowish; claws very long, slender, unidentate, the pulvilli rudimentary. Genitalia; basal clasp segment moderately stout; terminal clasp segment long, stout. Other organs indistinct.

Female.—Length, 1 mm. Antennæ extending to the base of the abdomen, rather thickly haired, fuscous yellowish; 13 subsessile segments, the fifth with a length about $\frac{1}{2}$ greater than its diameter and with a thick whorl of long, stout setæ; terminal segment reduced, narrowly rounded apically. Palpi yellowish, the first segment subquadrate, the second narrowly oval, the third as long as the second, the fourth $\frac{1}{2}$ longer than the third, somewhat dilated. Abdomen apparently lighter than in the male; ovipositor short, terminal lobes narrowly oval and sparsely setose. Other characters nearly as in the male.